

REMARKS

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

At the outset, Applicants wish to draw the Examiner's attention to **copending application, Serial No. 10/069,278**. Copies of the claims and abstract are filed herewith by way of an **Information Disclosure Statement/List of Related Cases**. The Examiner is requested to indicate consideration of this copending application on the record.

Claims 1-7 and 9-20 are active in this application. Claim 18 stands withdrawn from consideration as being drawn to non-elected subject matter.

Claims 1-7, and 15-16 and 19-20 stand rejected as being anticipated under 35 U.S.C. § 102(e) or 102(b) or as being obvious under 35 U.S.C. § 103 (a) over Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1. That rejection is untenable and should not be sustained.

Claim 1

The present invention as set forth in **Claim 1** relates to a water-soluble polymer composition obtained by continuous polymerization of at least one unsaturated monomer, wherein during said polymerization **at least one parameter biasing the polymerization is varied according to a recurrent pattern**.

Claims 2-7, 15-16 and 20 depend on Claim 1.

The term "recurrent pattern" is defined at page 4 of the specification, 2nd paragraph:

In the meaning of the invention, "according to a recurrent pattern" means that the parameters biasing the polymerization are varied in any desired manner, but at regular recurring time intervals within a reasonable range familiar to those skilled in the art, and preferably in a continuous fashion.

Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a water-soluble **polymer composition** obtained by continuous polymerization of at least one unsaturated monomer, wherein during said polymerization **at least one parameter** biasing the polymerization is **varied according to a recurrent pattern**. As a result, the polymer composition according to the present invention is different from the polymers of Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1.

The Examiner argues that 1) Patel et al disclose the continuous feeding of monomer (Office Action of January 22, 2004, page 5, 1st paragraph; Office Action of July 14, 2004, page 3, starting at line 6 from the bottom) and that 2) EP 0630 909 shows drop wise addition of monomer (Office Action of January 22, 2004, page 5, 1st paragraph; Office Action of July 14, 2004, page 3, starting at line 6 from the bottom; Office Action of January 7, 2005, page 4, starting at line 11 from the bottom). According to the Examiner, these process steps meet the claimed requirement of a parameter **biasing** according to regular reoccurring time integrals. However, Applicants disagree.

The continuous addition of monomer disclosed in Patel et al is **not a variation according to a recurrent pattern** of at least one parameter biasing the polymerization. In other words, just because a polymerization is continuous it does not mean that a parameter is varied according to a recurrent pattern. Applicants filed schematic figures illustrating examples of recurrent patterns according to the present invention with the Amendment of October 14, 2004. In addition, Applicants filed a scheme showing in a simplified manner a continuous addition of monomer as described in Patel et al. The differences are clear from the schematic drawings.

With regard to the product-by-process claims (Claims 1-7, 15, 16 and 20), Applicants wish to point out that the **structure and properties of polymers depend on how the polymerization is performed**. Different polymerization processes result in different

polymers, having different structures and properties. Since the processes of Patel et al and the present invention are different, the claimed polymer composition is different from the polymers of Patel et al.

EP 0 630 909 A1 merely discloses feeding monomer in increments, but there is no **recurrent pattern** in which parameters biasing the polymerization are **varied at regular recurring time intervals**.

EP 0 630 909 A1 discloses at page 5, lines 41 to 42 that the reaction mixture is added during the polymerization incrementally or otherwise. Applicants disagree with the Examiner's allegation that "incrementally" means necessarily "dropwise." In addition, "incrementally" does not mean that the monomer is added according to a recurrent pattern as claimed. There is simply no disclosure in EP 0 630 909 A1 that drops are added according to a recurrent pattern as claimed. Applicants filed a scheme illustrating in a simplified manner incremental addition of monomer as disclosed in this reference with the Amendment of October 14, 2004. Since the processes of EP 0 630 909 A1 and the present invention are different, the claimed polymer composition is different from the polymers of EP 0 630 909 A1.

With regard to EP 0 296 331 B1 the Examiner refers to the specification, the paragraph bridging pages 8 and 9 (Office Action of July 14, 2004, page 4, starting at line 8). However, contrary to the Examiner's position, this paragraph in the specification describes that the continuous polymerization of EP 0 296 331 B1 is modified to carry out a process according to the present invention:

"To carry out said process variant, the continuous polymerization described in EP 0 296 331, Example 4 and Fig. 2 **is modified** in such a way that the mass flow of catalyst solution is varied by a regulator via metering valves 28 and 30 according to a preselected pattern at regular time intervals in a recurring fashion."

Specification, paragraph bridging pages 8 and 9. Emphasis added.

Thus, the process of EP 0 296 331 B1 is different from the claimed process and the resulting polymers are different from the claimed polymers.

Claim 19

Claim 19 relates to a water-soluble **polymer composition**, obtained by continuous polymerization of at least one unsaturated monomer;

wherein during said polymerization at least one parameter biasing the polymerization is varied according to a recurrent pattern;

wherein said **recurrent pattern is an oscillation** about a mean value which can be selected at random;

wherein at least **one of the following parameters is subject to variation**:

- a concentration of at least one monomer,
- an amount of a catalyst,
- an amount of a molecular weight modifier,
- a pH value of a monomer solution, or
- a composition of said monomer solution.

Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a water-soluble **polymer composition** obtained by continuous polymerization of at least one unsaturated monomer, wherein during said polymerization **at least one parameter** biasing the polymerization is **varied according to a recurrent pattern**. In particular, fail to disclose or suggest that a parameter **oscillates** about a mean value during the polymerization. In other words there are no recurring minima and maxima of a parameter such as those claimed in Claim 19:

- a concentration of at least one monomer,

- an amount of a catalyst,
- an amount of a molecular weight modifier,
- a pH value of a monomer solution, or
- a composition of said monomer solution.

As a result, the polymer of Claim 19 is different from the polymers of the cited references.

Claim 2

Claim 2 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition that is obtained by a process in which the pattern is an oscillation about a mean value which can be selected at random. Thus, the polymer of Claim 2 is not disclosed or suggested.

Claim 3

Claim 3 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition that is obtained by a process in which the oscillation is harmonic or anharmonic. Thus, the polymer of Claim 3 is not disclosed or suggested.

Claim 4

Claim 4 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition that is obtained by a process in which at least one of the following parameters is subject to variation:

- a concentration of at least one monomer,
- an amount of a catalyst,
- an amount of a molecular weight modifier,
- a pH value of a monomer solution, or
- a composition of said monomer solution.

Thus, the polymer of Claim 4 is not disclosed or suggested.

Claim 5

Claim 5 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition that is obtained by a process in which the polymerization is effected on a moving support. Thus, the polymer of Claim 5 is not disclosed or suggested.

Claim 6

Claim 6 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition which is a co-polymer or terpolymer composition. Thus, the polymer of Claim 6 is not disclosed or suggested.

Claim 7

Claim 7 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition which is a non-ionogenic, anionic or cationic polymer composition. Thus, the polymer of Claim 7 is not disclosed or suggested.

Claim 15

Claim 15 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition which is in a powdered form. Thus, the polymer of Claim 15 is not disclosed or suggested.

Claim 16

Claim 16 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition that is obtained by a process in which the oscillation is undamped. Thus, the polymer of Claim 16 is not disclosed or suggested.

Claim 20

Claim 20 is separately patentable because Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 fail to disclose or suggest a polymer composition that is obtained by a process the parameter biasing the polymerization is varied at regular recurring time intervals. Thus, the polymer of Claim 20 is not disclosed or suggested.

Thus, Claims 1-7, and 15-16 and 19-20 are Not Anticipated by Patel et al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 within the meaning of 35 U.S.C. §102(b) or (e). In addition, Claims 1-7, and 15-16 and 19-20 are Not Obvious over Patel et

al (US 6,103,839), or EP 0 630 909 A1 or EP 0 296 331 B1 within the meaning of 35 U.S.C. §103(a).

Ground (B)

Claims 9-14, and 17 stand rejected under 35 U.S.C. § 102(b) or obvious under 35 U.S.C. §103 (a) over EP 0 630 909 A1. That rejection is untenable and should not be sustained.

Claim 9

Claim 9 relates to a **process** for the continuous production of a water-soluble polymer composition, said process comprising

polymerizing at least one unsaturated monomer, wherein at least one parameter biasing said polymerization is varied according to a recurrent pattern.

Claims 10-14 and 17 depend on Claim 9.

EP 0 630 909 A1 fails to disclose or suggest a **process** as claimed in Claim 9 in which at least one unsaturated monomer is polymerized, wherein at least one parameter biasing said polymerization is varied according to a recurrent pattern. In particular, there is no disclosure of an oscillation as claimed in Claim 10.

The term “recurrent pattern” is defined at page 4 of the specification, 2nd paragraph:

In the meaning of the invention, “according to a recurrent pattern” means that the parameters biasing the polymerization are varied in any desired manner, but at regular recurring time intervals within a reasonable range familiar to those skilled in the art, and preferably in a continuous fashion.

As discussed above, the processes of EP 0 630 909 A1 and the present invention are different. See discussion under ground (A). EP 0 630 909 A1 fails to disclose or suggest the process as claimed in Claim 9.

Claim 10

Claim 10 is separately patentable because EP 0 630 909 A1 fails to disclose or suggest a process in which the pattern is an oscillation about a mean value which can be selected at random. Thus, the process of Claim 10 is not disclosed or suggested.

Claim 11

Claim 11 is separately patentable because EP 0 630 909 A1 fails to disclose or suggest a process in which the oscillation is harmonic or anharmonic. Thus, the process of Claim 11 is not disclosed or suggested.

Claim 12

Claim 12 is separately patentable because EP 0 630 909 A1 fails to disclose or suggest a process in which at least one of the following parameters is subject to variation:

- a concentration of at least one monomer,
- an amount of a catalyst,
- an amount of a molecular weight modifier,
- a pH value of a monomer solution, or
- a composition of said at least one monomer.

Thus, the process of Claim 12 is not disclosed or suggested.

Claim 13

Claim 13 is separately patentable because EP 0 630 909 A1 fails to disclose or suggest a process in which the polymerization is effected on a moving support. Thus, the process of Claim 12 is not disclosed or suggested.

Claim 14

Claim 14 is separately patentable because EP 0 630 909 A1 fails to disclose or suggest a process in which the polymer composition is powdered subsequent to polymerization. Thus, the process of Claim 14 is not disclosed or suggested.

Claim 17

Claim 17 is separately patentable because EP 0 630 909 A1 fails to disclose or suggest a process in which the pattern is an undamped oscillation. Thus, the process of Claim 17 is not disclosed or suggested.


Thus, Claims 9-14, and 17 are Not Anticipated by EP 0 630 909 A1 within the meaning of 35 U.S.C. §102(b). In addition, Claims 9-14, and 17 are Not Obvious over EP 0 630 909 A1 within the meaning of 35 U.S.C. §103(a).

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Customer Number
22850


Kirsten A. Grueneberg, Ph.D.
Registration No.: 47,297

Tel: (703) 413-3000
Fax: (703) 412-2220

NFO/KAG/pae